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☐ 1. Document ID: US 6483609 B1

L3: Entry 1 of 25 File: USPT Nov 19, 2002

DOCUMENT-IDENTIFIER: US 6483609 B1
TITLE: Image processing system, image processing method, image transmitting system, and image transmitting method

Application Filing Date (1):
19981109

Detailed Description Text (23):
The read resolution of the scanner 1 can be previously matched with the standard resolution of the selection image plane (character contours). For example, if the resolution of the selection image plane is 200 dpi, 200 dip may be set as the read resolution of the scanner 1, whereby the selection image plane resulting from separating the image can be input directly to the third compression section 17 and the third resolution conversion section 14 can be made unnecessary, reducing the system scale. If other two image planes are of low resolution, generally image quality degradation is inconspicuous at the combining time, thus the image planes may be converted into lower resolution than the read resolution of the scanner 1. However, this is not necessarily applied if higher image quality is required or load is not much imposed on transmission; for example, the two image planes can also be transmitted in the same resolution as the selection image plane.

Current US Original Classification (1):
358/434

Current US Cross Reference Classification (1):
358/1.2

Current US Cross Reference Classification (2):
358/1.9

Current US Cross Reference Classification (3):
382/232

Current US Cross Reference Classification (4):
382/240

Current US Cross Reference Classification (5):
382/298

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 6330666 B1

L3: Entry 2 of 25 File: USPT Dec 11, 2001

DOCUMENT-IDENTIFIER: US 6330666 B1
**** See image for Certificate of Correction ****

TITLE: Multistandard video decoder and decompression system for processing encoded bit streams including start codes and methods relating thereto

Application Filing Date (1):
19971007

Detailed Description Text (357):
Each of the standard compression encoding systems employs a unique start code configuration or image which has been selected to identify that particular compression specification. Each of the start codes also carries with it a start code value. The start code value is employed to identify within the language of the standard the type of operation that the start code is associated with. In the multi-standard decoder of the present invention, the compatibility is based upon the control token and DATA token configuration as previously described. Index signals, including flag signals, are circuit-generated within each state machine, and are described hereinafter as appropriate.

Current US Cross Reference Classification (1):
382/246

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 3. Document ID: US 6263422 B1

L3: Entry 3 of 25 File: USPT Jul 17, 2001

DOCUMENT-IDENTIFIER: US 6263422 B1
TITLE: Pipeline processing machine with interactive stages operable in response to tokens and system and methods relating thereto

Application Filing Date (1):
19950607

Detailed Description Text (409):
Each of the standard compression encoding systems employs a unique start code configuration or image which has been selected to identify that particular compression specification. Each of the start codes also carries with it a start code value. The start code value is employed to identify within the language of the standard the type of operation that the start code is associated with. In the multi-standard decoder of the present invention, the compatibility is based upon the control token and DATA token configuration as previously described. Index signals, including flag signals, are circuit-generated within each state machine, and are described hereinafter as appropriate.

Current US Cross Reference Classification (1):
382/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 6259820 B1

L3: Entry 4 of 25 File: USPT Jul 10, 2001

DOCUMENT-IDENTIFIER: US 6259820 B1
TITLE: Progressive JPEG decoding

Application Filing Date (1):
19980225

Brief Summary Text (6):
As shown in FIG. 1(a), in the JPEG compression method implementing sequential encoding, the original image is divided into blocks of pixels, each block typically containing 8.times.8 or 16.times.16 original image samples. Each 8.times.8 block of pixels is input to a DCT-encoder element 10 having a forward discrete cosine transform processor 12 that performs a Discrete Cosine Transform (DCT) on each pixel block, producing a representation of the input block as DCT coefficients corresponding to frequencies and amplitudes, rather than corresponding directly to color information. These coefficients are then quantized, or rounded off, by a quantizer element 14 in accordance with a quantization table 16, and DC coding is performed that employs a difference algorithm over all quantized blocks in the image, in a selected scan order. This difference algorithm subtracts a "DC" or zero frequency term corresponding to the mean pixel value of a block, from the DC term of the preceding block. The difference coefficients are then scanned in a different order, such as a zigzag order, and the non-zero coefficients (i.e., blocks in which a difference from the preceding block occurred) are coded to indicate the number of preceding zero coefficients (i.e., the number of pixel blocks in which no change occurred) and also the value of the non-zero difference. An additional compression step known as entropy encoding is performed by encoder element 18 to achieve a more compact coding of the quantized DCT elements. Entropy encoding schemes specified by the JPEG standard include Huffman coding and arithmetic coding, with the optional implementation of entropy encoding tables 19. The output 20 of the DCT encoder 10 is a data stream of compressed image data.

Current US Original Classification (1):
382/250

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 5. Document ID: US 6246801 B1

L3: Entry 5 of 25 File: USPT Jun 12, 2001

DOCUMENT-IDENTIFIER: US 6246801 B1
TITLE: Method and apparatus for generating selected image views from a larger image having dependent macroblocks

Application Filing Date (1):
19980306

Brief Summary Text (6):
Permitting multiple selected views of a larger image, however, becomes more difficult if the larger image is compressed. Specifically, since image data following image compression is of variable length, pixel boundaries are not readily detectable in a compressed image. In addition, since many encoding techniques exhibit intra-frame pixel dependencies, such as encoding the difference values for adjacent DC coefficients under the JPEG standard, the pixel values must be modified when generating a selected portion of a larger image, to reflect the reordering of the subset of pixels in the selected image view.

Current US Original Classification (1):
382/248

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

☐ 6. Document ID: US 6226412 B1

L3: Entry 6 of 25 File: USPT May 1, 2001

DOCUMENT-IDENTIFIER: US 6226412 B1
TITLE: Secure digital interactive system for unique product identification and sales

Application Filing Date (1):
19980209

Detailed Description Text (18):
In practice, the actual data compression methods employed could include the industry standard JPEG format, Lead Technologies "cmp" format, Iterated Systems "fractal compression", "wavelet compression", or other proprietary or commercially available techniques. Compression ratios on the order of 30:1 are preferably employed, thereby producing image files of approximately 20 KBytes or smaller in size. It would be particularly advantageous to utilize a compression technique which is resolution-independent (such as fractal compression), which produces very compact image data files that may be re-sized to match the resolution of the video display interface hardware in the client PC. In addition, selected image files 64 to be transmitted to the image file server and designated as "T" or "Transmitted" format are created by modifying the internally stored L-format files, utilizing formatting methods similar to those discussed above for encrypting without hardware security keys. Alternatively, the use of "public" keys with "private" keys may be implemented, as well established in the art of secure encrypting of data transmissions, and following standards such as the DES (Data Encryption Standard) developed for the U.S. Government, or the MD5 system offered by RSA Security, Inc. Similarly, image files 66 received from the image file server 40 are encrypted in "R" or "Received" format, which may be distinct from either the "T" format or the local "L" format. As such, these files may be decrypted upon receipt, and converted into the normal L-format utilized for the local client PC database or the reomote PC may be provided facilities for decrypting the "R" format.

Current US Original Classification (1):
382/232

Current US Cross Reference Classification (3):
382/305

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw. Desc | Image

☐ 7. Document ID: US 6167153 A

L3: Entry 7 of 25 File: USPT Dec 26, 2000

DOCUMENT-IDENTIFIER: US 6167153 A
TITLE: Method of compressing JPEG files

Application Filing Date (1):
19980720

Detailed Description Text (7):
Referring now to FIG. 7, generally speaking the present invention includes performing a portion of the JPEG compression method on a reduced set of data without producing a substantial loss in the quality of the output image. As before, the scanned image is separated into blocks 102 of pixels 120 which indicate the

intensity of the light at the various locations of the image. As with the standard JPEG method described above, an 8.times.8 block of pixels has shown to be very successful when used with the present invention. But also as before, other pixel block dimensions are possible and the invention is not limited to this embodiment. Those skilled in the art will recognize that a smaller or larger block size might be chosen when it is desired to preserve more or less image detail. In fact it should be noted that while the horizontal and vertical dimensions are identical in the embodiment of pixel block 102 described here, this is not a requirement for practicing the present invention. For example, a non-square block might be chosen if the image was generated for a device possessing asymmetric resolutions in the vertical and horizontal directions.

Current US Original Classification (1):
382/166

Current US Cross Reference Classification (1):
382/170

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw. Desc | Image

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☐ 8. Document ID: US 6125201 A

L3: Entry 8 of 25 File: USPT Sep 26, 2000

DOCUMENT-IDENTIFIER: US 6125201 A
TITLE: Method, apparatus and system for compressing data

Application Filing Date (1):
19981218

Current US Original Classification (1):
382/166

Current US Cross Reference Classification (1):
382/248

CLAIMS:

8. The method according to claim 2 wherein said predefined criteria are expressed in terms of the size of the compressed image data for a selected image quality.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw. Desc | Image

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☐ 9. Document ID: US 6079009 A

L3: Entry 9 of 25 File: USPT Jun 20, 2000

DOCUMENT-IDENTIFIER: US 6079009 A
**** See image for Certificate of Correction ****
TITLE: Coding standard token in a system compromising a plurality of pipeline stages

Application Filing Date (1):
19970924

Detailed Description Text (369):
Each of the standard compression encoding systems employs a unique start code configuration or image which has been selected to identify that particular compression specification. Each of the start codes also carries with it a start code value. The start code value is employed to identify within the language of the standard the type of operation that the start code is associated with. In the multi-standard decoder of the present invention, the compatibility is based upon the control token and DATA token configuration as previously described. Index signals, including flag signals, are circuit-generated within each state machine, and are described hereinafter as appropriate.

Current US Cross Reference Classification (1):
382/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 10. Document ID: US 6038380 A

L3: Entry 10 of 25 File: USPT Mar 14, 2000

DOCUMENT-IDENTIFIER: US 6038380 A
TITLE: Data pipeline system and data encoding method

Application Filing Date (1):
19970731

Detailed Description Text (409):
Each of the standard compression encoding systems employs a unique start code configuration or image which has been selected to identify that particular compression specification. Each of the start codes also carries with it a start code value. The start code value is employed to identify within the language of the standard the type of operation that the start code is associated with. In the multi-standard decoder of the present invention, the compatibility is based upon the control token and DATA token configuration as previously described. Index signals, including flag signals, are circuit-generated within each state machine, and are described hereinafter as appropriate.

Current US Cross Reference Classification (1):
382/246

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 11. Document ID: US 5973731 A

L3: Entry 11 of 25 File: USPT Oct 26, 1999

DOCUMENT-IDENTIFIER: US 5973731 A
TITLE: Secure identification system

Application Filing Date (1):
19950530

Detailed Description Text (22):
In practice, the actual data compression methods employed could include the industry

standard JPEG format, Lead Technologies "cmp" format, Iterated Systems "fractal compression", "wavelet compression", or other proprietary or commercially available techniques. Compression ratios on the order of 30:1 or more preferably are employed, thereby producing image files of approximately 10 KBytes or smaller in size. It would be particularly advantageous to utilize a compression technique which is resolution-independent (such as fractal compression) which produces very compact image data files that may be re-sized to match the video display interface hardware in the client PC. In addition, selected image files 64 to be transmitted to the image file server and designated as "T" or "Transmitted" format are created by modifying the internally stored L-format files, utilizing formatting methods similar to those discussed above for encrypting without hardware security keys. Alternatively, the use of "public" keys with "private" keys may be implemented, as well established in the art of secure encrypting of data transmissions, and following standards such as the DES (Data Encryption Standard) developed for the U.S. Government, or the MD5 system offered by RSA Security, Inc. Similarly, image files 66 received from the image file server are encrypted in "R" or "Received" format, which is distinct from either the "T" format or the local "L" format. These files are decrypted upon receipt, and may be converted into the normal L-format utilized for the local client PC database.

Current US Cross Reference Classification (3):
382/116

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 12. Document ID: US 5912697 A

L3: Entry 12 of 25 File: USPT Jun 15, 1999

DOCUMENT-IDENTIFIER: US 5912697 A
TITLE: Video mail system capable of transferring large quantities of data without hampering other data transmissions

Application Filing Date (1):
19951019

Detailed Description Text (160):
Regarding the selection of the representative frame, the user directly selects an image displayed on the screen of the display unit, and hence, the operation of the selection is easy. Besides, data in the VRAM 109 are directly utilized as the representative frame data. With this method, the representative frame data are formed of the decoded data and are therefore independent of the compression system for the motion picture data, such as the MPEG system. Accordingly, this method is applicable even in a case where compressed motion picture data conforming to such a system as vector quantization or an international standard "H. 261" are adopted as the data of the video mail.

Current US Cross Reference Classification (1):
358/402

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 13. Document ID: US 5881301 A

L3: Entry 13 of 25 File: USPT Mar 9, 1999

DOCUMENT-IDENTIFIER: US 5881301 A
TITLE: Inverse modeller

Application Filing Date (1):
19971002

Detailed Description Text (360):
Each of the standard compression encoding systems employs a unique start code configuration or image which has been selected to identify that particular compression specification. Each of the start codes also carries with it a start code value. The start code value is employed to identify within the language of the standard the type of operation that the start code is associated with. In the multi-standard decoder of the present invention, the compatibility is based upon the control token and DATA token configuration as previously described. Index signals, including flag signals, are circuit-generated within each state machine, and are described hereinafter as appropriate.

Current US Cross Reference Classification (1):
382/232

☐ 14. Document ID: US 5828848 A

L3: Entry 14 of 25 File: USPT Oct 27, 1998

DOCUMENT-IDENTIFIER: US 5828848 A
**** See image for Certificate of Correction ****
TITLE: Method and apparatus for compression and decompression of video data streams

Application Filing Date (1):
19961031

Brief Summary Text (24):
According to yet another aspect of the invention, there is provided a method of representing video data in compressed form, including the steps of dividing into rectangular blocks a present image to be compressed, the present image being formed in an image plane, comparing each of the rectangular blocks of the present image with a corresponding rectangular block of a reference image to generate comparison data from the block of the present image, selecting for representation the rectangular blocks of the present image for which the generated comparison data meets a selection criterion, generating mapping data indicative of locations in the image plane which correspond to the selected rectangular blocks for the present image, and representing the present image in compressed form by use of header data for identifying the present image, the mapping data generated for the present image, and image data representative of the selected rectangular blocks of the present frame. Preferably, blocks of pixels corresponding to the selected rectangular blocks of the present frame are subjected to an orthogonal transform and then the resulting coefficient data is quantized. For example, JPEG compression may be applied to the blocks of pixels in the selected rectangular blocks. (In a conceptual sense, the latter aspect of the invention contemplates dividing the image plane into "postage stamps", selecting for further compression processing and storage only those "stamps" which differ significantly from a reference image, and then, when the present image is to be reconstituted, the compressed "postage stamp" data is reconstituted and then "pasted" at the appropriate points on the reference image, according to mapping data generated at the time of selection of the "postage stamps".)

Current US Cross Reference Classification (4):

382/236

Current US Cross Reference Classification (5):
382/238

Current US Cross Reference Classification (6):
382/248

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 15. Document ID: US 5805914 A

L3: Entry 15 of 25 File: USPT Sep 8, 1998

DOCUMENT-IDENTIFIER: US 5805914 A
**** See image for Certificate of Correction ****
TITLE: Data pipeline system and data encoding method

Application Filing Date (1):
19950607

Detailed Description Text (408):
Each of the standard compression encoding systems employs a unique start code configuration or image which has been selected to identify that particular compression specification. Each of the start codes also carries with it a start code value. The start code value is employed to identify within the language of the standard the type of operation that the start code is associated with. In the multi-standard decoder of the present invention, the compatibility is based upon the control token and DATA token configuration as previously described. Index signals, including flag signals, are circuit-generated within each state machine, and are described hereinafter as appropriate.

Current US Original Classification (1):
382/232

Current US Cross Reference Classification (1):
382/233

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 16. Document ID: US 5801853 A

L3: Entry 16 of 25 File: USPT Sep 1, 1998

DOCUMENT-IDENTIFIER: US 5801853 A
**** See image for Certificate of Correction ****
TITLE: Color image processing method and apparatus which calibrates correction data for image data

Application Filing Date (1):
19951115

Detailed Description Text (58):
First, a standard color image is input from the image input unit 3, and is subjected to color conversion by the color conversion unit 4. The color correction unit 6

passes image data without modification according to an instruction from a CPU (central processing unit, not shown). Terminals A of a selector 505 are selected according to an instruction from the CPU, and the image data are transmitted to the image compression unit 7. Terminals B of a selector 502 are selected, and the data compressed by the image compression unit 7 are transmitted to the image expansion unit 13. Sides B of a selector 503 are selected, and the image data expanded by the image expansion unit 13 are input to a color correction value calculation unit 506. Standard image data Y.sub.2, Cr.sub.2 and Cb.sub.2 are input from a look-up table 507 to a color correction value calculation unit 506 via terminals A of a selector 504. The color correction value calculation unit 506 performs the same calculation of correction values as in the fourth embodiment, and the correction matrix M1 is set in the color correction unit 6.

Current US Original Classification (1):
358/504

Current US Cross Reference Classification (1):
358/1.9

Current US Cross Reference Classification (2):
358/400

Current US Cross Reference Classification (3):
358/405

Current US Cross Reference Classification (4):
358/406

Current US Cross Reference Classification (5):
358/539

☐ 17. Document ID: US 5784631 A

L3: Entry 17 of 25 File: USPT Jul 21, 1998

DOCUMENT-IDENTIFIER: US 5784631 A
**** See image for Certificate of Correction ****
TITLE: Huffman decoder

Application Filing Date (1):
19950616

Detailed Description Text (358):
Each of the standard compression encoding systems employs a unique start code configuration or image which has been selected to identify that particular compression specification. Each of the start codes also carries with it a start code value. The start code value is employed to identify within the language of the standard the type of operation that the start code is associated with. In the multi-standard decoder of the present invention, the compatibility is based upon the control token and DATA token configuration as previously described. Index signals, including flag signals, are circuit-generated within each state machine, and are described hereinafter as appropriate.

Current US Original Classification (1):
382/246

☐ 18. Document ID: US 5715070 A

L3: Entry 18 of 25 File: USPT Feb 3, 1998

DOCUMENT-IDENTIFIER: US 5715070 A
TITLE: Freely configurable image processing apparatus

Application Filing Date (1):
19950425

Detailed Description Text (56):
The external interface 13 is an interface between a digital copying machine according to this embodiment and the outside, and for instance, the external interface section 13 functions as an interface with a FAX transmitting/receiving section 34 as shown in FIG. 33. The FAX transmitting/receiving section 34 changes a format of image data to that for communication, transmits the data to an external line, and also returns a format of data supplied from the outside to that for image data, and records the image data. Also in this case, image data consists of 8 bits, while phase data for record output consists of 2 bits. The entire construction is as shown in FIG. 33. The FAX transmitting/receiving section 34 comprises a FAX image processing section 35, an image memory 36, a memory control section 37, a facsimile control section 38, an image compressing or extending section 39, a modem 40, and a network control unit 41, and the data subjected to correction such as shading correction, .gamma. correction, MTF correction, is subjected to image compression by means of the most effective system selected by the image processing section 35, and image data corresponding to the compressed image information is stored in an image memory 36. This image memory has a capacity enough to store image data by up to several tens of sheets of standard documents (for instance, from 20 to 60 sheets) in the compressed state, and the write in/read out operations are controlled by the memory control section 38. Also, image data read out from the image memory 36 can be restored to the original picture signal by the image processing section 35.

Current US Original Classification (1):
358/468

Current US Cross Reference Classification (1):
358/1.15

Current US Cross Reference Classification (2):
358/443

Current US Cross Reference Classification (3):
358/448

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

☐ 19. Document ID: US 5684865 A

L3: Entry 19 of 25 File: USPT Nov 4, 1997

DOCUMENT-IDENTIFIER: US 5684865 A
TITLE: Method for efficient facsimile communication with selective call receivers

Application Filing Date (1):
19950828

Brief Summary Text (6):
Conventional methods for compressing facsimile dam consist of computing black run-lengths and white run-lengths of scan lines within bit images. The black and white run-lengths are then coded according to a Modified Huffman Coding procedure defined under the Consultative Committee on International Telegraph and Telephone (CCITT) Group 3 standard protocol. This compression procedure utilizes a codebook that is stored in a memory, such as a codebook 200 illustrated for example in FIG. 3, to replace each black or white run-length with a representative code from the codebook 200. The codes are mapped to run-lengths in the codebook 200 according to an observed probability of occurrence of certain run-length patterns in facsimile data images. The more frequent the occurrence of a pattern, the smaller the representative code in the code book 200. Huffman coding can result in an efficient compression of a facsimile data image when the selected probabilities of the codes mapped to run-lengths in the codebook 200 match exactly with the actual probability distribution for run-length patterns in an actual facsimile data image. A close approximation of the probability distributions between the codebook 200 and the occurrence of run-length patterns in an actual facsimile data image would also result in an acceptable data compression.

Current US Cross Reference Classification (1):
358/1.9

Current US Cross Reference Classification (2):
358/407

☐ 20. Document ID: US 5489998 A

L3: Entry 20 of 25 File: USPT Feb 6, 1996

DOCUMENT-IDENTIFIER: US 5489998 A
**** See image for Certificate of Correction ****
TITLE: Color image processing apparatus having transmitter and receiver which perform color correction in accordance with a common standard color image and method for same

Application Filing Date (1):
19950123

Detailed Description Text (58):
First, a standard color image is input from the image input unit 3, and is subjected to color conversion by the color conversion unit 4. The color correction unit 6 passes image data without modification according to an instruction from a CPU (central processing unit, not shown). Terminals A of a selector 505 are selected according to an instruction from the CPU, and the image data are transmitted to the image compression unit 7. Terminals B of a selector 502 are selected, and the data compressed by the image compression unit 7 are transmitted to the image expansion unit 13. Sides B of a selector 503 are selected, and the image data expanded by the image expansion unit 13 are input to a color correction value calculation unit 506. Standard image data Y.sub.2, Cr.sub.2 and Cb.sub.2 are input from a look-up table 507 to a color correction value calculation unit 506 via terminals A of a selector 504. The color correction value calculation unit 506 performs the same calculation of correction values as in the fourth embodiment, and the correction matrix M1 is set in the color correction unit 6.

Current US Original Classification (1):
358/523

Current US Cross Reference Classification (1):

358/518

☐ 21. Document ID: US 5359676 A

L3: Entry 21 of 25 File: USPT Oct 25, 1994

DOCUMENT-IDENTIFIER: US 5359676 A
TITLE: Decompression of standard ADCT-compressed document images

Application Filing Date (1):
19930719

Detailed Description Text (10):
At FIG. 9, there is shown a system for improving the appearance of a decompressed document image while maintaining fidelity with an original document image from which it is derived, comprises a compressed data input 200, receiving data from a source of compressed data, such as from memory, or a transmission media. At block 210, the Huffman decoder stores the received compressed data and derives the quantized DCT signals therefrom, removing the statistical run length encoding from the data. At block 220, which essentially is a multiplier, the quantized coefficients, with the Q-table stored in ROM memory or the like, as an input, are converted to the unquantized DCT coefficients. At block 230, unquantized DCT coefficients are converted to spatial values representing the appearance of the image. In a standard JPEG ADCT decompression process, these values would be used for output. In accordance with the invention, instead of outputting the derived spatial values, the spatial image signal is iteratively filtered with a .sigma.-filter 250, having an adaptively varied threshold selected for each image block, as will be hereinafter discussed. The resulting image is used as the input to a DCT transformer 260 which generates a set of frequency space coefficients much as the original compression process did, and finally a comparator 270 with the filtered transformed image, the received image and the Q-table as inputs, compares each block of filtered transform coefficients to a corresponding block of received transform coefficients and the selected Q table, to determine whether the filtered transformed image is derivable from the original image. If the filtered image is acceptable the filtered transformed image is transferred to block 230, which prepares the image for output at block 280. If the image is not acceptable, the DCT coefficients are changed as in U.S. patent application Ser. No. 07/956,128 to Eschbach. It has been discovered that while iterative DCT coefficient checking is possible, it is not required.

Current US Original Classification (1):
382/246

Current US Cross Reference Classification (1):
382/260

☐ 22. Document ID: US 5353132 A

L3: Entry 22 of 25 File: USPT Oct 4, 1994

DOCUMENT-IDENTIFIER: US 5353132 A
TITLE: Image processing device

Application Filing Date (1):
19920622

Detailed Description Text (53):
In the case of (HINDO-X)>(HINDO-MOJI), the system proceeds to step S147 where a character image is selected. In step S148, the pair of the compressor C and the decompressor C is selected. When (HINDO-X)>(HINDO-MOJI) is not met, the system proceeds to step S142 where a judgment of whether or not (HENSA-X)>(HENSA-SHASIN) is made, in which HENSA-X is a standard deviation determined from the above-mentioned histogram by the CPU 1. In this embodiment, the average value of the frequency is set at "0". The HENSA-SHASIN is a predetermined value (40, for instance) capable of distinguishing between a sketch image and a natural image.

Detailed Description Text (54):
When (HENSA-X)>(HENSA-SHASIN), the system proceeds to step S145, a natural image is selected. In step S146 where the pair of the compressor B and the decompressor B is selected. When (HENSA-X)>(HENSA-SHASIN) is not met, the system proceeds to step S143 where a sketch image is selected. In step S144, a pair of the compressor A and the decompressor A is selected. This judgment based on the maximum value and the standard deviation of the frequency is relatively easily performed, and its image identification accuracy is very high. Thus, the type of an image is automatically identified. The types of a compressor and an decompressor are selected. These information is stored in the DATA-ID of the parameter memory 4.

Current US Original Classification (1):
358/539

Current US Cross Reference Classification (1):
358/1.9

Current US Cross Reference Classification (2):
382/166

☐ 23. Document ID: US 5333212 A

L3: Entry 23 of 25 File: USPT Jul 26, 1994

DOCUMENT-IDENTIFIER: US 5333212 A
TITLE: Image compression technique with regionally selective compression ratio

Abstract Text (1):
An enhancement to a standard lossy image compression technique wherein a single set of side information is provided to allow decompression of the compressed file. Certain portions of the image are selected (either by the user or automatically) for more compression than other portions of the image. A particular embodiment is implemented for use with the JPEG image compression technique. JPEG calls for subdividing the image into blocks, transforming the array of pixel values in each block according to a discrete cosine transform (DCT) so as to generate a plurality of coefficients, quantizing the coefficients for each block, and entropy encoding the quantized coefficients for each block. Techniques for increasing the compression ratio include subjecting each selected block to a low pass filtering operation prior to the transform, subjecting the coefficients for each selected block to a thresholding operation before the quantizing step, subjecting the coefficients for each selected block to a downward weighting operation before encoding them, or, where the entropy encoding uses Huffman codes, mapping coefficients to adjacent shorter codes.

Application Filing Date (1):
19921117

Current US Original Classification (1):
382/250

Current US Cross Reference Classification (3):
382/264

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 24. Document ID: US 5301241 A

L3: Entry 24 of 25 File: USPT Apr 5, 1994

DOCUMENT-IDENTIFIER: US 5301241 A
TITLE: Image compression method and apparatus employing principal component analysis

Application Filing Date (1):
19910306

Brief Summary Text (6):
Compression by measuring correlation over an entire image and choosing a new set of axes (Principal Component Analysis) has been used successfully for satellite images (A.A.D. Canas, IEE Proceedings, Vol 131, PtF. No 7 December 1984, pp 761-767). However, for scanned image data, for example, this technique does not achieve optimum compression.

Current US Original Classification (1):
382/166

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 25. Document ID: US 5111306 A

L3: Entry 25 of 25 File: USPT May 5, 1992

DOCUMENT-IDENTIFIER: US 5111306 A
TITLE: Endoscope image filing system

Application Filing Date (1):
19910416

Detailed Description Text (103):
In such case, the image reader can confirm the restored and displayed image and can re-select the compression rate again (however, the alteration from 1/3 compression to 1/10 compression is possible but naturally the alteration of 1/10 compression to 1/3 compression is impossible). That is to say, such SW 102 and LED 103 as in FIG. 22 are provided also on the front panel of the filing apparatus 3b set in the conference room. By using this switch 102, for example, the image selected by the criterion in (a) above is re-confirmed, then the image not judged to be so important and the image recorded at a compression rate of 1/3 anyhow by the above mentioned criterion (C) are re-confirmed. When the image reader pushes the 1/10-compression selecting switch 102 for the image judged to be sufficient [corresponding to the above mentioned criterion (6)] to be handled as a routine image. the image will be

re-compressed by the 1/10-compression mode and will be re-recorded in the Mo (in such case, the previous 1/3-compression image information will be erased). The above mentioned procedure is shown in the flow chart in FIG. 24.

Current US Original Classification (1):
358/403

Current US Cross Reference Classification (2):
358/1.9

Current US Cross Reference Classification (3):
358/448

Current US Cross Reference Classification (4):
358/462

Term	Documents
@AD	21970918
CHOSEN	590818
CHOSENS	2
358/$	0
"358/FOR.159"	357
"358/FOR.160"	157
"358/FOR.161"	19
"358/FOR.162"	28
"358/FOR.163"	38
"358/FOR.164"	34
"358/FOR.165"	14
(@AD<19990118 AND ((358/$ OR 382/$)!.CCLS.) AND COMPRESS$3 SAME (IMAG$3 NEAR1 (SELECT$3 OR CHOOS$3 OR CHOSEN OR CHOICE$3)) SAME (EVALUAT$3 OR MEASUR$3 OR CRITERI$3 OR STANDARD$3)).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	25

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Previous Page Next Page